

PUBLIC UTILITIES COMMISSION

505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298



May 27, 2022

TA2022-955

Jonathan Connelly, P. E
Director of Asset Management
Wildfire Safety & Asset Management
Pacific Power (A Division of PacifiCorp)
825 NE Multnomah St.,
Portland, OR 97232

SUBJECT: Electric Transmission Audit of PacifiCorp's Yreka/Siskiyou Districts

Dear Mr. Connelly:

On behalf of the Electric Safety and Reliability Branch (ESRB) of the California Public Utilities Commission (CPUC), Ogeonye Enyinwa of ESRB staff conducted an electric transmission audit of PacifiCorp's Yreka/Siskiyou District from May 3, 2022 through May 5, 2022. During the audit, ESRB staff conducted a field inspection of PacifiCorp's transmission facilities and equipment and reviewed pertinent documents and records.

As a result of the audit, ESRB staff identified violations of one or more General Orders (GOs). A copy of the audit findings itemizing the violations is enclosed. Please respond no later than June 24, 2022 with an electronic copy of all corrective actions and preventive measures taken by PacifiCorp to correct the identified violations and prevent the recurrence of such violations. The response should indicate the date of each remedial action and preventative measure completed.

If you have any questions concerning this audit, please contact Ogeonye Enyinwa at (415) 470-3504 or ogeonye.enyinwa@cpuc.ca.gov.

Sincerely,

A handwritten signature in blue ink, appearing to read "Banu Acimis".

Banu Acimis, P.E.
Program and Project Supervisor
Electric Safety and Reliability Branch
Safety and Enforcement Division
California Public Utilities Commission

Enclosure: CPUC Transmission Audit Findings of PacifiCorp Yreka and Siskiyou Districts

Cc: Lee Palmer, Director, Safety and Enforcement Division, CPUC
Nika Kjensli, Program Manager, ESRB, SED, CPUC
Nathan Sarina, Senior Utilities Engineer (Supervisor), ESRB, SED, CPUC
Rickey Tse, Senior Utilities Engineer (Supervisor), ESRB, SED, CPUC
Ogeonye Enyinwa, Senior Utilities Engineer (Specialist), ESRB, SED, CPUC

CPUC ELECTRIC TRANSMISSION AUDIT FINDINGS
PACIFICORP YREKA/SISKIYOU DISTRICTS
May 3-5, 2022

I. Records Review

During the transmission audit, Electric Safety and Reliability Branch (ESRB) staff reviewed the following records for PacifiCorp's Yreka/Siskiyou Districts:

- Map and list of all transmission circuits in the districts
- Policy 001 – Maintenance Intervals for Apparatus, Relays, Line Patrol/Inspections, and Communications Equipment
- Policy 012 – Damaged Insulator Replacement Policy Transmission and Distribution Lines
- Policy 045 – Woodpecker Damage Repair and Replacement for Wood Poles
- Policy 123 – Pacific Power Facility Inspection Audit Policy for Transmission and Distribution (T&D) Lines for California, Oregon, and Washington
- Policy 297 – State of California--Detailed Inspections for T&D Lines
- Policy 342 – State of California Patrol Inspections of T & D Lines
- Policy 358 – State of California, Oregon, and Washington Overhead (OH) Transmission Line IR Inspections
- Procedure 069 – Clearance Table, Grandfathering Matrix, FAQ and Dropdown Codes PacifiCorp's Visual Assurance Inspections, Transmission and Distribution Lines, Asset Management – Policy No. 011, Revision 2/18/2021
- Policy 298 – State of California -- Wood Pole Test and Treatment for T&D Lines
- Policy 192 – State of California Condition Priorities and Correction Timeframes (Pacific Power)
- PacifiCorp's Correction Management Plan, Correction Time Periods and Compliance Requirements, Asset Management Policy No. 192, Dated 03/16/2020
- PacifiCorp's Detailed Inspections for Transmission & Distribution Lines, Asset Management Policy No. 297, Dated 1/13/2017
- PacifiCorp's Wood Pole Test & Treatment, Transmission and Distribution Lines, Asset Management Policy No. 298, Dated 1/13/2017
- PacifiCorp's Transmission & Distribution Vegetation Management Program, Standard Operating Procedures, Dated 08/19/2019
- A summary list of detailed inspections performed including dates of the last two detailed inspections.
- A list of work pending, reassessed, completed, and canceled in the previous 12 months leading up to March 18, 2022.
- A list of capital projects completed in the previous 12 months leading up to March 18, 2022.
- A list of intrusive inspections performed in the previous 36 months leading up to March 18, 2022.

- A list of infrared inspections performed in the previous 12 consecutive months leading up to March 18, 2022
- A list of aerial patrols and inspections performed in the previous 12 consecutive months leading up to March 18, 2022.
- Transmission and distribution vegetation inspections for the previous 12 months leading up to March 18, 2022.
- TA 021 General – Design - Provides standard code requirements, grades of construction, and design tolerances.
- TA 041 General – Line Design - Provides information on general concepts used in line design such as information about line routing, layout of transmission lines, selection of span lengths, and methods of dealing with conductor clearances.
- TA 061 General – Overload Capacity Factors - Provides information regarding overload capacity and safety factors required in NESC and GO95, respectively.
- TA 071 General – Transmission Structure Foundation Design Criteria for Towers and Monopole Structures
- Provides detailed information and instructions for designing transmission structure foundations according to equipment needs and geographic values.
- A list of pole loading calculations performed within the previous 12 months leading up to March 18, 2022.
- PG&E’s PacifiCorp safety notifications for all safety issues received over the previous 12 consecutive months
- A list of all Quality Assurance and Quality Control reviews performed in the previous 12 consecutive months leading up to March 18, 2022

II. Records Review - Violations List

ESRB staff found the following violations during the record review portion of the audit:

General Order (GO) 95, Rule 31.1, Design, Construction and Maintenance states in part:

"Electrical supply and communication systems shall be designed, constructed, and maintained for their intended use, regard being given to the conditions under which they are to be operated, to enable the furnishing of safe, proper, and adequate service.

For all particulars not specified in these rules, design, construction, and maintenance should be done in accordance with accepted good practice for the given local conditions known at the time by those responsible for the design, construction, or maintenance of communication or supply lines and equipment."

GO 165, Section IV – Transmission Facilities states:

"Each utility shall prepare and follow procedures for conducting inspections and maintenance activities for transmission lines.

Each utility shall maintain records of inspection and maintenance activities. Commission staff shall be permitted to inspect records and procedures consistent with Public Utilities Code Section 314 (a)."

PacifiCorp Company Policy 001 Maintenance Intervals for Apparatus, Relays, Line Patrol/Inspections, and Communications Equipment table¹ below provides the OH Inspection frequencies requirement which is compliant with GO 165:

Table 1: PacifiCorp Company Maintenance Interval List, Distribution/Transmission Maintenance, Line Inspection- Equipment.

Equipment Type	Equipment Description	Equipment Use	State	Maintenance Task	Interval Calendar Year
Local Transmission	Overhead Transmission Line		ID, OR, UT, WA & WY	Visual Assurance Inspection	2
	Overhead Transmission Line		All States	Visual Assurance Inspection	1
	Overhead Transmission Line	FHCA	CA, OR, UT & WA	Visual Assurance Inspection	1
	Overhead Transmission Line	FHCA	CA, OR, UT & WA	Detail Inspection	5
	Overhead Transmission Line		All States	Detail Pole Test & Treat Inspection	10
	Overhead Transmission Line		CA, OR & WA	Hold Down Inspection	1
	Overhead Transmission Line		CA, OR & WA	Hold Down Inspection	2
	Underground Transmission Line		UT	Detail Inspection	3 months
Main Grid Transmission	Overhead Transmission Line		All States	Visual Assurance Inspection	1
	Overhead Transmission Line		All States	Detail Inspection	2
	Overhead Transmission Line		All States	Pole Test & Treat Inspection	10

¹ See PacifiCorp’s response to ESRB’s Transmission Pre-audit Data Request Question # 3, Attachment CPUC #3

	Overhead Transmission Line		CA, OR & WA	Hold Down Inspection	1
	Overhead Transmission Line		CA, OR & WA	Hold Down Inspection	2
Line Recloser/Protection Devices	Distribution Transfer Switch / U/G	No relay protection		Operate MO	5
	Distribution Transfer Switch / U/G	with relay protection		Verify settings, replace battery, operate MO	5
	Distribution Recloser	Circuits		Recloser Battery Replacement	3
	Distribution Recloser	Circuits		Recloser Battery Replacement	2
	Distribution Fuse Saver	Circuits		Battery Replacement	5
Underground Vaults		Ogden		Vault Inspection	
		Salt Lake		Vault Inspection	
		Portland		Vault Inspection	
		Portland		Air Cooled Transformers Cleaned and Tested	7
		Portland		River Crossing Sign Inspection	monthly
Line Fault Indicators	Fault Indicators	Circuits and Transmission Lines	All States	Fault Indicator Battery Replacement	9
			RMP	Fault Indicator Battery Replacement	4

			PP	Fault Indicator Battery Replacement	8
Line High Voltage Switches	Transmission High Voltage Switches	Transmission Lines	All States	High Voltage Switch Battery Replacement	3

PacifiCorp did not meet the 5-year inspection frequency requirement as prescribed above. ESRB staff reviewed all of PacifiCorp’s inspection and patrol records from the years: 1994 to 2022 and found 76 overdue local transmission inspections out of a total of 14,869 inspections, shown in Table 2 below.

Table 2: Past due inspections and patrols by inspection type

Inspection Type	Inspections Past Due Date	Percent Past Due Inspections in Total
Detailed Inspection	76	0.5%

The Location 668026/02 below in Table 3 was overdue for the 5-year cycle detailed inspection by 4075 days which was calculated from the date of the last completed inspection of 1/20/2011 until 3/18/2022.²

Table 3: Most Overdue Inspections by Type

Inspection Type	Inspection Location	Date Completed	Days Overdue
Detailed Inspection	668026/02	01/20/2011	4075

² This is the date ESRB sent out the Pre-Audit Data Request to PacifiCorp

III. Field Inspection

ESRB staff inspected the following facilities:

Table 4. Facility locations inspected by ESRB Staff during the field audit

Location No.	Structure Location/ID	Structure Type	Voltage (KV)
1	668003/11/2X	Wood	69
2	668003/12/2X/L	Wood	69
3	668003/12/2X/R	Wood	69
4	668004/11X/001	Wood	69
5	668018/13X/001/R	Wood	69
6	668018/13X/001/L	Wood	69
7	668003/9X/002	Wood	69
8	668004/12X/001/	Wood	69
9	668018/001/001/L	Wood	69
10	668018/001/001/R	Wood	69
11	668003/10/2X	Wood	69
12	668059/4X/39/R	Wood	230
13	668059/4X/39/C	Wood	230
14	668059/4X/39/L	Wood	230
15	668059/7X/40/L	Wood	230
16	668059/7X/40/C	Wood	230
17	668059/7X/40/R	Wood	230
18	668019/004/001	Wood	69
19	668002/001/001	Concrete	69
20	668002/002/001	Wood	69
21	668002/003/001	Wood	69
22	668001-1/014/001	Wood	69
23	668001/015/001	Wood	69
24	668001-1/001/002	Wood	69
25	668001/005/002	Wood	69
26	668001/001/001	Wood	69
27	668001/006/003	Wood	69
28	668001-1/009/004	Wood	69
29	668001-1/008/004	Wood	69
30	668001-1/019/004	Wood	69
31	668001-1/001/005	Wood	69
32	668001-1/017/005	Wood	69
33	668001-1/016/005	Wood	69
34	668002/ 6/12	Wood	69

35	668002/ 4/12	Wood	69
36	668002/ 3/12	Wood	69
37	668002/ 2/12	Wood	69
38	668002/ 1/12	Wood	69
39	668001/ 1/23	Wood	69
40	668001/ 2/23	Wood	69
41	668010/ 11/5	Wood	69
42	668010/ 12/5	Wood	69
43	668067/ 12/5	Wood	115
44	668067/ 3/24	Wood	115
45	668010/ 13/5	Wood	69
46	668010/ 1/8	Wood	69
47	668010/ 14/5 6	Wood	69
48	668010/ 15/5	Wood	69
49	668010/ 20/7X	Wood	69
50	668067/ 8/23-R	Wood	115
51	668067/ 8/23- L	Wood	115
52	668067/ 7/023-R	Wood	115
53	668067/ 7/023-L	Wood	115
54	668010/5/37	Wood	69
55	668010/4/37	Wood	69
56	668010/10/37	Wood	69
57	668010/ 9/37	Wood	69
58	668010/ 8/37	Wood	69
59	668010/ 11/37	Wood	69
60	668010/12/37	Wood	69
61	668010/13/37	Wood	69
62	668010/15/39	Wood	69
63	668010/14/39	Wood	69
64	668010/13/39	Wood	69
65	668010/16/39	Wood	69
66	668010/1/40	Wood	69
67	668010/2/40	Wood	69
68	668010/3/40	Wood	69
69	668002/ 2/51	Wood	69
70	668002/ 1/51	Wood	69
71	668002/ 22/50	Wood	69
72	668002/ 21/50	Wood	69
73	668002/ 20/50	Wood	69
74	668002/ 19/50	Wood	69
75	668002/ 18/50	Wood	69

76	668002-1/30/4	Wood	69
77	668002-1/ 29/4	Wood	69
78	668002-1/ 28/4	Wood	69
79	668002-1/27/4	Wood	69
80	668002-1/26/4	Wood	69
81	668002-1/ 25/4	Wood	69
82	668002-1/ 24/4	Steel	69
83	668002-1/23/4	Wood	69
84	668002-1/22/4	Wood	69
85	668002-1/ 21/4	Wood	69
86	668002-1/19/4	Wood	69
87	668002-1/ 18/4	Wood	69
88	668002-1/ 20/4	Wood	69
89	668002/ 23/42	Wood	69
90	668002/ 22/42	Wood	69
91	668002/ 21/42	Wood	69
92	668002/ 20/42	Wood	69
93	668001-6/14X1/1	Wood	69
94	668075/12/46	Steel	115
95	668001-6/ 14X/46	Wood	69
96	668075/ 13/46	Steel	115
97	668075/ 13X1/46	Steel	115
98	668075/ 13X2/46	Wood	115
99	668001-6 /13X3/46	Wood	69
100	668001-6/ 1X1/1	Steel	69

IV. Field Inspection – Violations List

ESRB staff observed the following violations during the field inspection:

1. GO 95, Rule 31.1, Design Construction and Maintenance states in part:

“Electrical supply and communication systems shall be designed, constructed, and maintained for their intended use, regard being given to the conditions under which they are to be operated, to enable the furnishing of safe, proper, and adequate service.

For all particulars not specified in these rules, design, construction, and maintenance should be done in accordance with accepted good practice for the given local conditions known at the time by those responsible for the design, construction, or maintenance of communication or supply lines and equipment.”

ESRB identified the following deficiencies related to structure foundations in the following locations given in Table 4: Locations 12, 13, and 14 had buried guy anchors.

2. **GO 95, Rule 51.6.A, High Voltage Marking of Poles** states in part:

“Poles which support line conductors of more than 750 volts shall be marked with high voltage signs. This marking shall consist of a single sign showing the words “HIGH VOLTAGE”, or pair of signs showing the words “HIGH” and “VOLTAGE”, not more than six (6) inches in height with letters not less than 3 inches in height. A pair of signs may be stacked to a height of no more than 12 inches. Such signs shall be of weather and corrosion-resisting material, solid or with letters cut out therefrom and clearly legible.”

The following Locations given in Table 4, exhibited an illegible, missing, or partially peeled off High Voltage signs: 2, 3, 4, 5, 6, 7, 9, 10, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 23, 24, 26, 30, 32, 34, 35, 44, 50, 51, 52, 53, 54, 57, 58, 60, 61, 64, 65, 66, 67, 70, 72, 74, 75, 76, 77, 78, 80, 82, 85, 86, 88, 89, 91, 92, 93, 94, 96, 97, 99, and 100.

3. **GO 95, Rule 31.1 - Design, Construction, and Maintenance** states:

"Electrical supply and communication systems shall be designed, constructed, and maintained for their intended use, regard being given to the conditions under which they are to be operated, to enable the furnishing of safe, proper, and adequate service. For all particulars not specified in these rules, design, construction, and maintenance should be done in accordance with accepted good practice for the given local conditions known at the time by those responsible for the design, construction, or maintenance of communication or supply lines and equipment."

ESRB identified a leaning pole issue at Location Number 28. The Pole was at or over 15 degrees.

4. **GO 95, Rule 31.6 – Abandoned Lines** states:

"Lines or portions of lines permanently abandoned shall be removed by their owners so that such lines shall not become a public nuisance or a hazard to life or property. For the purposes of this rule, lines that are permanently abandoned shall be defined as those lines that are determined by their owner to have no foreseeable future use."

ESRB identified the following abandoned facilities at Location Numbers: 60, 76, 86, and 87.

V. Observation

During the field inspection, ESRB staff observed a potential third-party concern. The farming equipment at Location number 33 was left lying next to the pole.